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# Asymmetric Correlation in IT Project Portfolio Management

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**Asymmetric Correlation in IT Project Portfolio Management***John Burke, Michael Shaw*

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**Abstract:**

Real Option Analysis (ROA) has been a focus of the MIS literature for the last ten years. Much of this literature has focused on (1) the suitability of using ROA in IS/IT; (2) case studies examining single projects; (3) real options embedded in projects; (4) the Black Scholes or Binomial option models; and (5) developing models to account for sources of variability. In this paper we investigate (5) above by taking a portfolio view of an organization's IT/IS projects. We assume that both costs and revenues behave stochastically. We use the concept of an IT Project Portfolio Map to divide the portfolio into different sections by the relative size of project costs and revenues. Finally, we introduce the idea of asymmetric correlation in these different areas of the portfolio. The importance of asymmetric correlation and the dependence structure of a portfolio in general stems from the idea that projects that have uncorrelated costs and revenues are more valuable than projects with highly correlated costs and revenues.